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EXAMINER

RODRIGUEZ, PAUL L

ART UNIT	PAPER NUMBER
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2125

DATE MAILED: 08/19/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/833,766

Applicant(s)

EMOTO, KEIJI

Examiner

Paul L Rodriguez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 12-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 15-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-25 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The response to the restriction requirement has been received and considered. Claims 1-11 and 15-25 are presented for examination. Claims 12-14 are withdrawn from consideration.

Election/Restrictions

2. Applicant's election with traverse of Group I in Paper No. 6 is acknowledged. The traversal is on the ground(s) that the inventions are so closely related that a proper search of any of the claims would, of necessity require a search of the other and that a duplicative search with possible inconsistent results may occur if the restriction requirement is maintained. Also, that the burden of additional search outweighs public interest. This is not found persuasive, the examiner disagrees with the applicant that the search of a double pipe structure and a double pipe structure incorporating an electrical wire would necessitate a search of the other. Incorporation of an electrical wire changes the scope of the double pipe to the point that the double pipe with an electrical conductor would also have to be searched in the electrical conductor arts, the double pipe alone would not require the field of search of Group II. In response to the argument that the search results would produce inconsistent results. Because Group I and II are directed toward separate and distinct inventions and Group I contains numerous claim limitations not present in the invention of Group II, the searches of the two inventions would inherently produce searches that are inconsistent when compared to each other, however the searches, if performed properly would provide searches consistent with the scope of the claimed invention, therefore this argument is not persuasive. Finally, the burden upon the examiner to search both separate and distinct inventions is still considered great enough to maintain the restriction requirement.

The requirement is still deemed proper and is therefore made FINAL.

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3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

4. Figure 12 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "101" has been used to designate both vacuum chamber and business office. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "102" has been used to designate both object and factory. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

7. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "104" has been used to designate both factory and plate. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

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8. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "105" has been used to designate both flange and Internet. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

9. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "106" has been used to designate both apparatuses and pipes. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

10. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 2060. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

11. The examiner has provided a number of examples of the drawing deficiencies in the above, however, the list of deficiencies may not be all inclusive. Applicant should refer to these as examples of deficiencies and should make all the necessary corrections to eliminate the drawing objections.

Specification

12. The disclosure is objected to because of the following informalities:

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Page 2 lines 18-20 refer to “An arrow in figure 12”, there are three separate and distinct arrows in figure 12, unclear which arrow is being referred to.

Page 3 line 2 refers to “stage 3”, previously reference number 103.

Page 3 line 4 refers to “pipes 6”, previously reference number 106.

Page 3 line 8 refers to “stage 3”, previously reference number 103.

Page 3 lines 1-18 discuss figure 12 but uses the reference numbers of figure 1.

Page 18 line 15 refers to reference number 101 as a business office of a vendor, reference number 101 previously a vacuum chamber.

Page 19 line 8 refers to “Internet 105” reference number 105 previously a flange.

Page 19 line 11 – 20 line 14 refers to “factories 102”, previously “object”.

Page 19 line 11 – 20 line 14 refers to “factories 104”, previously “plate”.

Page 19 line 18 – col. 20 line 8 refers to “apparatuses 106”, previously “pipes”.

Page 21 refers to “LAN 2060”, there is no reference number 2060 in the figures.

Appropriate correction is required.

13. The examiner has provided a number of examples of the specification deficiencies in the above, however, the list of deficiencies may not be all inclusive. Applicant should refer to these as examples of deficiencies and should make all the necessary corrections to eliminate the specification objections.

Claim Objections

14. Claims 15-17, 19, 22 and 23 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent

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form, or rewrite the claim(s) in independent form. Claim 15 is directed toward an alignment apparatus and does not further limit the pipe structure of claim 1, claim 16 is directed toward an electron beam lithography apparatus and does not further limit the alignment apparatus or the pipe structure of the previous claims. Claim 17 is directed toward an exposure apparatus and does not further limit the alignment apparatus or the pipe structure of the previous claims. Claim 19 is directed toward a semiconductor device manufacturing method and does not further limit the exposure apparatus, alignment apparatus or pipe structure of the previous claims. Claim 22 is directed toward a semiconductor manufacturing factory and does not further limit the exposure apparatus, alignment apparatus or pipe structure of the previous claims. Claim 23 is directed toward a maintenance method and does not further limit the exposure apparatus, alignment apparatus or pipe structure of the previous claims.

Claim Rejections - 35 USC § 112

15. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8, 9, 11 and 15-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

16. The term "more flexible" in claim 8 is a relative term which renders the claim indefinite. The term "more flexible" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Flexibility of the material relative to other

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materials has not been defined in the specification, the only reference in the specification made to something that is "more flexible" was made in reference to a wire, not a pipe.

17. The term "nearly free" in claim 9 is a relative term which renders the claim indefinite. The term "nearly free" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear as to what constitutes something as nearly free, this term was not found in the specification, a reference to "almost free" was used however this too is a relative term and provided no clear definition as to the meaning of the claim limitation.

18. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 11 lines 2-3 are indefinite because it is unclear whether the phrase contained in the parenthesis is part of the claimed subject matter or not.

19. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: the relationship between an alignment apparatus and the pipe structure and the alignment apparatus and the vacuum chamber. There is no structural relationship claimed as to the configuration of an alignment apparatus. A pipe structure in a vacuum chamber does not provide adequate elements to constitute an alignment apparatus.

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20. Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: the relationship between an electron beam lithography apparatus and the alignment apparatus. An electron beam lithography apparatus requires more than an alignment apparatus, a vacuum chamber and a pipe.

21. Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: the relationship between an exposure apparatus and the alignment apparatus. An exposure apparatus requires more than an alignment apparatus, a vacuum chamber and a pipe.

22. Claim 24 recites the limitation "the apparatus" in line 1. There is insufficient antecedent basis for this limitation in the claim. It is unclear if the apparatus is referring to the exposure apparatus or the alignment apparatus.

23. Claim 24 recites the limitation "the computer network" in line 6. There is insufficient antecedent basis for this limitation in the claim.

24. Due to the number of 35 USC § 112 second paragraph rejections, the examiner has provided a number of examples of the claim deficiencies in the above rejection(s), however, the list of rejections may not be all inclusive. Applicant should refer to these rejections as examples

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of deficiencies and should make all the necessary corrections to eliminate the 35 USC § 112 second paragraph problems and place the claims in a proper format.

25. Due to the vagueness and a lack of a clear definition of the terminology and phrases used in the specification and claims, the claims have been treated on their merits as best understood by the examiner.

Claim Rejections - 35 USC § 102

26. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

27. Claims 1 and 6-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Hosono et al (U.S. Pat 4,906,496). The claimed invention reads on Hosono et al as follows:

Hosono et al discloses (claim 1) a pipe structure comprising a double pipe (figure 2) having a resin inner pipe (col. 3 lines 13-18), and a resin outer pipe covering an outside of the inner pipe (col. 3 lines 18-20), and a discharge mechanism for discharging fluid in a space between the inner pipe and the outer pipe (figure 5, reference numbers 48, 49, col. 3 lines 52-57, col. 4 lines 19-34), (claim 6) wherein said double pipe keeps a vacuum space between the inner pipe and the outer pipe (col. 3 lines 52-57, col. 4 lines 27-35), (claim 7) wherein the inner pipe is formed from a flexible resin material (col. 3 lines 13-18), (claim 8) wherein the inner pipe is

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formed from a more flexible material than a material of the outer pipe (col. 3 lines 34-45, ranges of thickness listed, an inner pipe thinner than the outer would provide a more flexible inner), (claim 9) wherein the outer pipe is formed from a resin material nearly free from degassing (col. 3 lines 13-18) and (claim 10) wherein the outer pipe is thinner than the inner pipe (col. 3 lines 34-45, based on thickness provided, the dimensions are inherent).

28. Claims 1, 5, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagata et al (U.S. Pat 4,368,219). The claimed invention reads on Nagata et al as follows:

Nagata et al discloses (claim 1) a pipe structure comprising a double pipe (figure 3a, col. 6 lines 8-11), having a resin inner pipe (col. 6 lines 15-17), and a resin outer pipe covering an outside of the inner pipe (col. 6 lines 10-15), and a discharge mechanism for discharging fluid in a space between the inner pipe and the outer pipe (col. 6 lines 22-26), (claim 5) wherein the inner pipe in the outer pipe includes a plurality of inner pipes (figures 4a-c), (claim 8) wherein the inner pipe is formed from a more flexible material than a material of the outer pipe (col. 6 lines 8-21) and (claim 9) wherein the outer pipe is formed from a resin material nearly free from degassing (col. 6 lines 8-15, inherent to a hard nylon hose for compressed air).

29. Claims 1, 3, 6 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Fukui et al (US Pub 2001/0017164). The claimed invention reads on Fukui et al as follows:

Fukui et al discloses (claim 1) a pipe structure comprising a double pipe (figure 4) having a resin inner pipe (reference number 8, paragraph 51, 52) and a resin outer pipe (reference number 1, 5) covering an outside of the inner pipe (paragraph 46, 47, 50) and a discharge mechanism for discharging fluid in a space between the inner pipe and the outer pipe (paragraph

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51), (claim 3) wherein the inner or outer pipe has a bellows structure or coil shape (reference number 4, 11, paragraph 52, 54), (claim 6) wherein said double pipe keeps a vacuum space between the inner pipe and the outer pipe (paragraph 51) and (claim 7) wherein the inner pipe is formed from a flexible resin material (paragraph 52).

Claim Rejections - 35 USC § 103

30. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

31. Claims 1, 2 and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukasawa et al (U.S. Pat 5,611,655) in view of Hosono et al (U.S. Pat 4,906,496).

Fukasawa et al teaches (claim 1) a pipe structure comprising a double pipe (figure 16, col. 17 lines 51-54), having an inner pipe (reference number 44) and a resin outer pipe covering an outside of the inner pipe (reference number 141, col. 17 lines 51-55), and a discharge mechanism for discharging fluid in a space between the inner pipe and the outer pipe (col. 17 lines 54-55), (claim 2) wherein said double pipe is used in a vacuum chamber having a vacuum atmosphere (reference number 4a-c, figure, 3, 16, 17, col. 6 lines 19-28, col. 17 lines 51-61), (claim 6) wherein said double pipe keeps a vacuum space between the inner pipe and the outer pipe (col. 17 lines 54-55) and (claim 9) wherein the outer pipe is formed from a resin material nearly free from degassing (col. 17 lines 53).

Fukasawa et al fails to teach wherein the inner pipe is resin, wherein the inner pipe is formed from a flexible resin material, wherein the inner pipe is formed from a more flexible

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material than a material of the outer pipe and wherein the outer pipe is thinner than the inner pipe.

Hosono et al teaches a double pipe (figure 2) having a resin inner pipe (col. 3 lines 13-18), wherein the inner pipe is formed from a flexible resin material (col. 3 lines 13-18), (claim 8) wherein the inner pipe is formed from a more flexible material than a material of the outer pipe (col. 3 lines 34-45, ranges of thickness listed, a thinner inner pipe then the outer would provide a more flexible material), and wherein the outer pipe is thinner than the inner pipe (col. 3 lines 34-45, based on thickness provided).

Fukasawa et al and Hosono et al are analogous art because they are both related to using a double pipe, to the passing of fluids or gas and to minimize leaking.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the inner resin pipe of Hosono et al in the vacuum process apparatus of Fukasawa et al because Hosono et al teaches an improved double walled pipe that provides improved flexibility, can be produced with improved dimensional accuracy, can be easily attached to an end connector (col. 2 lines 3-21) and that the double walled pipe can use the separate passages for the passing of different fluids or gases (col. 3 lines 54-57) improving pipe functionality.

32. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hosono et al (U.S. Pat 4,906,496).

Hosono et al discloses most all of the instant invention as applied to claim 1. Hosono et al fails to teach wherein the outer pipe has a thickness of 10 μm to 100 μm inclusive.

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to include the thickness of the outer pipe in the measurements of 10 μm to 100 μm inclusive because applicant does not disclose that a thickness of 10 μm to 100 μm provides an advantage, is used for a particular purpose or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with a outer pipe thickness of 100 μm (discloses as .1mm) because Hosono et al also teaches that thickness' of the material can be as small as 50 μm and teaches that the invention is not limited to the recited dimensions and sizes (col. 3 lines 34-57).

Therefore, it would have been obvious matter of design choice to modify Hosono et al to obtain the invention as specified in claim 11.

33. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al (U.S. Pat 4,475,223) in view of Hosono et al (U.S. Pat 4,906,496).

Taniguchi et al teaches (claim 15) a alignment apparatus (reference number 25 figure 5, figure 6b) wherein the apparatus comprises the pipe structure (reference number 56w, figure 7b, col. 7 lines 47-48) and is arranged in a vacuum chamber (figure 4, 5, reference numbers 2, 13), (claim 16) an electron beam lithography apparatus (col. 1 lines 9-24) characterized by comprising the alignment apparatus defined in claim 15 (reference number 25 figure 5, figure 6b) and (claim 17) an exposure apparatus (figure 5) characterized by comprising the alignment apparatus defined in claim 15 (reference number 25 figure 5, figure 6b).

Taniguchi et al fails to teach (claim 1) a pipe structure comprising a double pipe, having a resin inner pipe and a resin outer pipe covering an outside of the inner pipe, and a discharge mechanism for discharging fluid in a space between the inner pipe and the outer pipe.

Hosono et al teaches (claim 1) a pipe structure comprising a double pipe (figure 2) having a resin inner pipe (col. 3 lines 13-18), and a resin outer pipe covering an outside of the inner pipe (col. 3 lines 18-20), and a discharge mechanism for discharging fluid in a space between the inner pipe and the outer pipe (figure 5, col. 3 lines 52-57, col. 4 lines 19-34, reference numbers 48, 49).

Taniguchi et al and Hosono et al are analogous art because they are both related to using a flexible pipe for the passing of gas.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the inner resin pipe of Hosono et al in the exposure system of Taniguchi et al because Hosono et al teaches an improved double walled pipe that provides improved flexibility, can be produced with improved dimensional accuracy, can be easily attached to an end connector (col. 2 lines 3-21) and that the double walled pipe can use the separate passages for the passing of different gases (col. 3 lines 54-57) improving pipe functionality.

34. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukasawa et al (U.S. Pat 5,611,655) in view of Hosono et al (U.S. Pat 4,906,496) as applied to claims 1 and 2 above, and further in view of Taniguchi et al (U.S. 4,475,223).

Fukasawa et al as modified by Hosono et al teaches a vacuum process apparatus that uses a double pipe vacuum structure as recited in claims 1 and 2 for the reasons above and also

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teaches a stage in the vacuum chamber (Fukasawa et al reference number 71, figure 8), differing from the invention as recited in claim 4 in that their combined teaching lacks wherein said double pipe is coupled to the stage.

Taniguchi et al teaches an exposure system wherein said pipe is coupled to the stage (figure 7b).

Fukasawa et al as modified by Hosono et al and Taniguchi et al are analogous art because they are both related to wafer processing systems.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the connection to a stage of Taniguchi et al in the vacuum process apparatus of Fukasawa et al as modified by Hosono et al because Taniguchi et al teaches an improved method and apparatus for transferring submicron patterns on to wafers with improved accuracy, improving production yield, using a vacuum actuated stage (col. 2 line 40 – col. 3 line 22).

35. Claims 19, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al (U.S. Pat 4,475,223) in view of Hosono et al (U.S. Pat 4,906,496) as applied to claims 15-17 above, and further in view of Azarya et al (U.S. Pat 5,978,578).

Taniguchi et al as modified by Hosono et al teaches an exposure process and system as recited in claims 15-17 for the reasons above, differing from the invention as recited in claims 19, 20 and 22 in that their combined teaching lacks (claim 19) installing manufacturing apparatuses for various processes in a manufacturing factory, (claim 20) further comprising the steps of connecting the manufacturing apparatuses by a local area network and communicating information about at least one of the manufacturing apparatuses between the local area network

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and an external network outside the manufacturing factory (claim 22) a manufacturing factory comprising manufacturing apparatuses for various processes, a local area network for connecting said manufacturing apparatuses, and a gateway which allows the local area network to access an external network outside the factory, wherein information about at least one of said manufacturing apparatuses can be communicated.

Azarya et al teaches (claim 19) installing manufacturing apparatuses for various processes in a manufacturing factory (figure 3, col. 8 lines 56-58, col. 9 lines 59-64), (claim 20) further comprising the steps of connecting the manufacturing apparatuses by a local area network (figure 3 reference number 18) and communicating information about at least one of the manufacturing apparatuses between the local area network and an external network outside the manufacturing factory (col. 9 line 59 – col. 10 line 8) , (claim 22) a manufacturing factory (reference number 12) comprising manufacturing apparatuses for various processes, a local area network for connecting said manufacturing apparatuses (reference number 18) and a gateway (reference number 42) which allows the local area network to access an external network outside the factory (col. 9 line 66 – col. 10 line 8), wherein information about at least one of said manufacturing apparatuses can be communicated (col. 8 lines 56-62).

Taniguchi et al as modified by Hosono et al and Azarya et al are analogous art because they are both related to manufacturing environments.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the network of Azarya et al in the processing/manufacturing environment of Taniguchi et al as modified by Hosono et al because Azarya et al teaches an automated control system that includes a controller to access real time information over a

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communications network anywhere in the world (col. 2 lines 53-67, col. 6 lines 60-67)
increasing system access and compatibility.

36. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al (U.S. Pat 4,475,223) in view of Hosono et al (U.S. Pat 4,906,496) as applied to claims 15-17 above, and further in view of Shiozawa et al (U.S. Pat 6,061,174).

Taniguchi et al as modified by Hosono et al teaches an exposure process and system as recited in claims 15-17 for the reasons above, differing from the invention as recited in claim 18 in that their combined teaching lacks wherein an F₂ laser or Ar₂ laser is used as a light source.

Shiozawa et al teaches an exposure apparatus that uses an F₂ laser or Ar₂ laser is used as a light source (col. 15 lines 1-37).

Taniguchi et al as modified by Hosono et al and Shiozawa et al are analogous art because they are both related to wafer processing.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the light source of Shiozawa et al in the exposure process and system of Taniguchi et al as modified by Hosono et al because Shiozawa et al teaches that a reduction in light source wavelengths increases pattern resolution (col. 1 lines 51-54), this in turn allows for smaller patterns and reduced circuit sizes, Ar₂ and F₂ lasers are known to have shorter wavelengths (col. 15 line 32-37).

Conclusion

37. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Ogushi et al (U.S. Pat 6,385,497) – teaches the factory management system, see figures 1 and 7.

Ebihara et al (U.S. Pat 6,246,204) – teaches an alignment apparatus for use in lithography that connects the alignment apparatus with a pneumatic pipe.

Tukahara et al (U.S. Pat 5,829,483) – teaches a double hose made of a resin material that incorporates bellows.

Furukawa et al (U.S. Pat 4,993,696) – teaches an exposure apparatus that uses fluid bearings in a processing chamber and (in the background of the invention) the use of flexible nylon tubes in a vacuum environment.

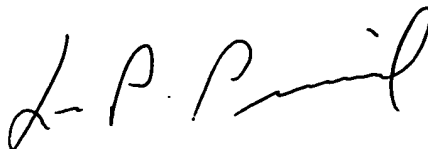
Sassin (U.S. Pat 3,743,760) – teaches a duct system for fluids and conductors.

38. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul L Rodriguez whose telephone number is (703) 305-7399. The examiner can normally be reached on 6:00 - 4:30 T-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P Picard can be reached on (703) 308-0538. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.

Paul L Rodriguez
Examiner
Art Unit 2125



LEO PICARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

PLR
8/14/03